CASE REPORTS

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Prolapse of Gastric Mucosa Through the Pylorus

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PROLAPSE OF REDUNDANT gastric mucosa is a definite clinical entity which has come to be better recognized during the past decade. Radiologists are calling attention to it with increasing frequency.

According to Rees,[7] Von Schmieden reported the first case in 1911. Melamed and Hiller[6] reviewed the literature in 1943 and found only 19 cases reported. Since then the condition has been noted in a fairly large number of cases. It has been reported observed in as many as 7.7 per cent of patients examined roentgenographically by gastrointestinal series, although that figure is considered rather high. Scott[9] stated that it was noted in 1.04 per cent of roentgen examinations of naval personnel with gastric complaints. The large discrepancy between those two reports of incidence can probably be attributed to the fact that the average age of naval personnel is relatively low, whereas the condition seems to occur more frequently in the fourth and fifth decades of life.

Following is a report upon a patient with pronounced prolapse of gastric mucosa who was recently observed by the authors.

REPORT OF A CASE

A 41-year-old white woman had had "indigestion" for five years with such symptoms as bloating, sour stomach, cramps, diarrhea and occasional bloody stools which the patient attributed to hemorrhoids. In September 1950 she began having substernal pain every day. It started after breakfast and lasted all day. Upon roentgen examination of the gastrointestinal tract a duodenal ulcer was noted. Dietary measures resulted in great improvement. X-ray examination was carried out again in January 1951 and although there was no evidence of ulcer there was a polypoid mass in the lower portion of the stomach and pylorus. Exploratory operation was advised.

The patient then came under the authors' observation, and on January 25, 1951, another x-ray examination was carried out.

The roentgenologist reported: Fluoroscopically, moderate hypertrophy of the mucosa of the cardiac section was noted. There was increase in peristalsis in the distal portion of the stomach. The rugal markings extending through the pyloric canal were greatly accentuated. A space-consuming lesion within the outline of the duodenum had the appearance of a polypoid or pedunculated lesion within, but not obstructing, the cap (Figure 1). At six hours the stomach was empty.

Figure 1.—Film of barium-filled duodenum with appearance of a space-consuming lesion.

The blood count was normal.

Laparotomy was done February 11, 1951. There was a soft, spongy diffuse mass in the prepyloric region. It was easily pushed through the pylorus into the duodenum and it seemed to fill the entire prepyloric area. There was no evidence of ulceration. The mass was thought to be prolapsed gastric mucosa, and owing to the extensiveness of the lesion partial gastrectomy with retrocolic anastomosis was performed.

The pathologist reported a moderate degree of low grade hypertrophic gastritis with prolapse of the mucosa through the pyloric sphincter.

The patient recovered and had no recurrence of symptoms.

ETIOLOGY

Several theories have been advanced as to the cause of mucosal prolapse. Eliason[2] believed that a low grade inflammatory process in the lower third of the stomach causes hypertrophy of the mucosa, which in some cases leads to prolapse. This view was corroborated by Haworth and

Rawls[4] in a discussion of prepyloric gastritis, a process limited to the gastric mucosa, which becomes thickened and may prolapse through the pylorus. However, they considered the gastritis as a psychosomatic disorder in which the parasympathetic system is subjected to excessive stimulation of central nervous system origin.

Rees[7] attributed the condition to a resistant narrowing of the pylorus, causing hyperperistalsis which loosens the attachment of mucous membrane. Recently, Melamed and Melamed[5] reported four cases in which prolapse of the mucosa existed simultaneously with congestive heart failure. In two of the cases the diagnosis was made radiologically and confirmed at autopsy; in the other two the diagnosis was also made by roentgen study, but with the clearing of the congestive failure, the prolapse also disappeared so far as could be determined by fluoroscopic and roentgen film examination. The Melameds concluded that edema of the mucosa from congestive heart failure may cause redundancy and prolapse.

Scott[9] advanced the theory that prolapse results from excessive and abnormal mobility of the prepyloric mucosa on the muscularis, and that the activating factor is hyperperistalsis owing to neurogenic or chemical stimuli.

Symptoms

Prolapse of gastric mucosa into the duodenum causes symptoms of so wide a variety that diagnosis on the basis of clinical observation is extremely difficult. In general, symptoms are not severe, unless there are complications, but they are of sufficient intensity to cause patients to seek medical advice. Cramping pain and intermittent epigastric distress are the most common symptoms. The distress may be in the form of fullness, bloating, belching and heartburn. Pain is fairly constant. It is centered in the epigastrium, but may radiate to the costal margins or to the back, or as in the case herein reported, it may be substernal. Nausea alone or with vomitus is next in frequency. Hematemesis and melena may be present if there is ulceration. Gastric acidity is not distinctive. Anorexia, anemia and loss of weight may be prominent symptoms. In short, the symptoms are such as those that are also associated with many other gastric or duodenal disorders, and frequently with gallbladder or liver disease.

Pathology

Usually there is redundancy of mucosa of the lower end of the stomach with hypertrophied rugae. The mobility of the mucosa on the muscularis is greater than normal. The pyloric muscle becomes hypertrophied. There may be evidence of local gastritis. In the case reported herein, the mucosal folds were very redundant and could easily be pushed through the pylorus for a distance of 5 cm.

Diagnosis

As the clinical symptoms are not distinctive, diagnosis is made by radiological studies. To be noted roentgenographically is a filling defect of the duodenum observed as a lobulated mushroom-shaped area of translucence with a central thin streak of barium, and intact mucosa. The translucent area may vary in size, shape and appearance during a single examination. There is no evidence of irritation of the duodenal bulb, but gastric peristalsis is hyperactive in most cases. Mucosal prolapsus is most difficult to differentiate from prolapsed pedunculated gastric tumors and polyps.

Complications

Complications sometimes occur:

(a) Ulceration, which apparently occurs quite frequently and may cause the prolapsus to be overlooked.

(b) Hemorrhage, which may follow minor erosions of the mucosa or actual ulceration.

(c) Gastric retention, because of variable pyloric obstruction.

(d) Malignant changes occurred in at least one case.[8]

Treatment

In mild cases conservative therapy is indicated. This consists of a regimen similar to that prescribed for patients with ulcer, including the use of mild antispasmodics and an antacid preparation if needed. In most cases the condition will be well controlled by this treatment.

In severe or progressive cases, operation must be considered. Many different surgical procedures have been advocated, but not enough data have been obtained as yet to permit adequate evaluation of the relative advantages of each.

Some of the operations employed are partial gastrectomy, pyloroplasty, gastrojejunostomy, simple excision of redundant mucosa with or without pyloroplasty, and anchorage of the mucosa to the muscularis. The authors believe partial gastrectomy and excision of the redundant mucosa with pyloroplasty are the better procedures.

Indications for operation are: (1) Persistent pain after a long period of adequate medical treatment; (2) hemorrhage; (3) obstruction of the pylorus.

SUMMARY

Prolapse of gastric mucosa through the pylorus is a definite clinical entity with symptoms very similar to those of peptic ulcer or allied gastric disease. The clinical manifestations may suggest the diagnosis, but the principal diagnostic aid is roentgen study.

In most cases conservative treatment gives satisfactory results. Operation is indicated only when symptoms do not clear up with medical management, or when a large tumor-like defect is observed in roentgen study, or when complications such as hemorrhage or obstruction occur.

A case in which operation was done is reported herein.

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